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File Invalidation Proposal
draft

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CMS transfer team chat

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Goals

- **Automate** the process of file invalidations

- Minimize **risk** of loosing any useful data

- Build on top of existing operations procedures, infrastructure and tools

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Two types of invalidations

- ### Local invalidation: unregister file replica at the site
  - file replica is deleted from TMDB
  - PhEDEx download agent at the site will try to re-transfer the file as long as dataset/block are still subscribed

- ### Global invalidation: involves DBS
  - all replicas are locally invalidated
  - file is assigned invalid status in DBS

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Examples

1. File is valid in DBS, but has no replica at any site
2. File replica is missing or corrupted on storage
   - detected by the BDV check
   - found by transfer team operators by analyzing logs for repeatedly failing transfers
   - reported lost/corrupted by the site storage facilities

Considerations

- To minimize the risk of data loss, we try to keep operations on the level of data catalogs (TMDB, DBS) and avoid actions on the storage side

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Proposal

1. Enable "*garbage collection*" by a central agent that will
   - detect files with zero replicas
   - publish a list of such files for global invalidation in DBS
2. Enable local invalidation
   - harvest BDV agent results for the sites and invalidate local replicas for files failing the checks to trigger retransfer
3. Extend the BlockDownloadVerifyInjector agent to inject BDV checks for the blocks containing repeatedly failing files
4. Site admins update storage catalogs tests for missing/ corrupted file (remove if necessary) and inject BDV checks
5. Files invalidated locally but remaining on storage will be detected by StorageConsistencyCheck

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Comments …

Suggestions …